

A Web and Handheld Based Diagnosis & Procedure Tracking System

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Personal computing devices such as personal organizers, handheld PC's, and tablet PC's are becoming common tools in clinical care and medical education. There is an increasing need for these devices to track various tasks students and medical trainees perform. In particular, in undergraduate medical education, there is a need for tracking the depth and breadth of each student's clinical encounters over the course of his or her education. The authors have developed an application which allows for easy and rapid deployment of a tracking system for medical students' experiences during their clinical training years.

This clinical encounter and procedure tracking system was created by and developed for medical students at University of Pittsburgh School of Medicine and will be used primarily during the third and fourth years. The system allows students to rapidly input their clinical experiences using simple forms on a handheld device or via identical forms on the Web. Faculty and administrative staff can view various dynamically generated reports from a secure website.

There are three main aspects of this program:

1. Data collection from students
2. Real time reporting to administrative faculty and staff of individual student progress and of the entire user pool
3. Customization of handheld and web-based forms and reports that allows educators and students to tailor the data collected based on the individual and each course or clerkship

This web-based system is available through live direct and wireless Internet connections or asynchronously using web-clipping software for disconnected users via the AvantGo application installed on their hand-held devices (Palm OS and Windows Pocket PC).

The system comes with a comprehensive web-based administrative back-end which allows users and faculty to customize every aspect of the handheld forms and reporting. The system runs on Internet Information Server web servers, a SQL Server 2000 database and Active Server Pages scripting (Microsoft, Redmond WA).

Standard data and questions about clinical experiences, as required by the School of Medicine, are included on each form. However, individual courses and clerkships are able to tailor the diagnoses lists, procedures lists and edit/add additional questions to the student forms according to their particular tracking needs.

Care was taken in the design of the input forms so that it is impossible to include patient specific information such as names, medical record numbers or even notations, in order to comply with current and proposed patient confidentiality standards.

The system is currently being integrated into the University of Pittsburgh's curriculum management website (Navigator) maintained by the Laboratory for Educational Technology. User testing, evaluation and widespread implementation of this system are in progress.